

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-312/82-28

Docket No. 50-312 License No. DPR-54 Safeguards Group \_\_\_\_\_

Licensee: Sacramento Municipal Utility District

P. O. Box 15830

Sacramento, California 95813

Facility Name: Rancho Seco Unit 1

Inspection at: Herald, California (Rancho Seco Site)

Inspection conducted: July 6 to August 3, 1982

Inspectors: *Talbert Young Jr. for*  
H. L. Canter, Senior Resident Inspector

8-12-82

Date Signed

*Talbert Young Jr. for*  
J. R. O'Brien, Resident Inspector

8-12-82

Date Signed

Date Signed

Approved by: *Talbert Young Jr.*  
T. Young Jr., Chief, Reactor Projects Section No. 2  
Reactor Projects Branch No. 1

8-12-82

Date Signed

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Summary: Inspection between July 6 - August 3, 1982 (Report No. 50-312/82-28)

Areas Inspected: Long Term shutdown activities; maintenance observations; surveillance observations; review of plant operations; TMI action plan verification; follow-up on Head-quarter's request; follow-up on regional requests; and independent inspection effort. The inspection involved 172 inspector hours by the Resident Inspectors.

Results: Of the eight areas inspected, one Severity Level V item of noncompliance was identified.

## DETAILS

### 1. Persons Contacted

- \*R. Rodriguez, Manager, Nuclear Operations
- \*P. Oubre', Plant Superintendent
- +D. Blachly, Operations Supervisor
- E. Bradley, Emergency Plan Coordinator
- N. Brock, Electrical/I&E Maintenance Supervisor
- D. Cass, Mechanical Maintenance Supervisor
- +\*R. Colombo, Technical Assistant
- +\*G. Coward, Maintenance Supervisor
- +\*S. Crunk, Associate Nuclear Engineer
- +B. Fraser, Mechanical Engineer
- D. Gardiner, Senior Chemical and Radiation Assistant
- J. Jewett, Quality Assurance Engineer
- W. Jurkovich, Site Resident Engineer(Generation Engineering)
- +F. Kellie, Assistant Chemistry and Health Physics Supervisor
- \*D. Low, I&C Supervisor
- R. Miller, Chemistry/Radiological Supervisor
- J. Newey, Senior Chemical and Radiation Assistant
- +\*T. Perry, On-site Quality Assurance Supervisor
- J. Price, Surveillance Test Coordinator
- S. Redeker, STA Supervisor
- S. Rutter, Quality Assurance Engineer
- L. Schwieger, Quality Assurance Director
- B. Spencer, Shift Supervisor
- T. Tucker, Planner/Scheduler
- J. Uhl, Mechanical Engineer
- +W. Wells, Administrative Assistant
- D. Whitney, Engineering and Quality Control Supervisor
- B. Wichert, Plant Mechanical Engineer
- \*D. Wiles, I&E Foreman
- W. Wilson, Senior Chemical and Radiation Assistant

The inspectors also talked with and interviewed several other licensee employees, including members of the engineering, maintenance, operations, and quality assurance (QA) organizations.

\*Denotes those attending the Exit Interview on June 28, 1982.

+Denotes those attending the Exit Interview on June 29, 1982.

### 2. Long Term Shutdown Activities

The plant was in cold shutdown for the entire month for the installation on each OTSG of newly designed external auxiliary feedwater headers.

During the report period, the inspectors observed control room operations, reviewed applicable logs, and conducted discussions with control room operators. The inspectors verified that surveillance tests required during the shutdown were accomplished, that tagout records were reviewed, and that containment integrity was verified. Tours of the Auxiliary Building and Reactor Building, including exterior areas, were made to assess equipment and plant conditions. Also, the tours were made to assess the effectiveness of radiological controls and adherence to regulatory requirements. Maintenance work requests were verified to have been initiated for equipment maintenance. The inspectors observed plant housekeeping/cleanliness conditions and looked for potential fire hazards. The inspectors, by observation and direct interview, verified that the physical security plan was being implemented in accordance with the station security plan. The inspectors reviewed the licensee's jumper/bypass controls to verify there were no conflicts with technical specification. Finally, the inspectors witnessed portions of the radioactive waste systems controls associated with radwaste shipments and solidification.

#### Auxiliary Feedwater Internal Header Repairs

Since discovering the damaged internal headers in April 1982, the licensee has gone ahead with designing and installing an external feedwater header on each OTSG. The resident inspectors have reviewed the licensee's quality assurance/quality control (QA/QC) program and management controls for these repairs. They will continue to review these programs as changes occur. In addition, the inspectors have been monitoring repair activities. As of this writing, the licensee has completed the installation of the external headers, which are now connected to the existing auxiliary feed lines. Hydrostatic testing and installation of thermal sleeves is in progress. Tube plugging operations outlined in a previous report (50-312/82-25) are completed, and the primary system has been refilled and vented. Seismic supports are being installed, with installation expected to be completed during the first week in August. Heatup is expected to commence on August 8, 1982, and the plant is expected to be critical by August 14, 1982. With surveillance testing completed, the licensee should be at full power by August 17, 1982. This energetic schedule is contingent upon NRR's review and approval of the design change packages.

No items of noncompliance or deviations were identified.

#### 3. Maintenance Observations

The inspectors observed portions of the maintenance activities listed below and verified that work was accomplished in accordance with

approved procedures, that work was accomplished by qualified personnel, that provisions for stationing a fire watch to oversee activities involving welding and open flame were complied with, and that Limiting Condition for Operation (LCO) requirements were met during repair.

- a. Nuclear service "C" inverter repair.
- b. "A" HPI pump lube oil cooler inspection.
- c. Spent fuel coolant ion exchange resin and filter replacement.
- d. Safety features valve solenoid replacement (SFY-46204).
- e. "A" decay heat pump seal repair and hydrostatic test.

Comments on Item d. (above)

On July 19, 1982, the inspectors became aware of maintenance work in which the ASCO solenoid valve (SFY-46204) on the Component Cooling Water (CCW) return isolation valve outside containment was replaced with an AC solenoid rather than the proper DC solenoid.

The following documents were examined as part of the inspection of this event:

- a. A.P.3, Rev. 23-Work Request
- b. QAP 3, Rev. 7 - Quality Assurance Classification
- c. QAP 4, Rev. 8 - Procurement Document Control
- d. QAP 5, Rev. 7 - Supplier Quality Assurance
- e. QAP 6, Rev. 9 - Inspection Planning
- f. QAP 10, Rev. 9 - Receiving Inspection
- g. QAP 13, Rev. 7 - Maintenance Inspection
- h. QAP 16, Rev. 5 - Inspection Status
- i. Work Requests: 60641, 59369, 59879
- j. NCRs: S-2509, Rev. 1, 2, and 3, and S-2752
- k. Installation and Maintenance Instruction Bulletins for ASCO 3-way Direct Acting Solenoid Valves: 8300, 8302, and 8315

- l. Purchase Order Number 30293
- m. Letter: ASCO to Wiles dated 7-21-82
- n. Bechtel SOV Data Sheet I-921
- o. SMUD Master Equipment List (Instruments)

The following facts were determined during the inspection:

- a. The operations department, performing maintenance governed by Work Request 60641, stroke tested valve SFV 46204 and thus burned out the AC solenoid on SFY-46204 during the swing shift on July 15, 1982. No safety-related problems were generated by this event.
- b. The QC inspection required on WR 60641 began during the day shift of July 15, 1982, and was completed a day later. The inspection disclosed the fact that an AC solenoid rather than a DC solenoid was installed in SFY-46204.
- c. Purchase Order 30293 dated April 23, 1982, was used to purchase ASCO solenoid number 8302C29RG.
- d. Purchase Order 30293 did not have the quality class of the solenoid formally noted.
- e. After Purchase Order 30293 was submitted, the licensee became aware of the fact that ASCO Solenoid Number 8302D29RG was a like-for-like replacement for the originally ordered solenoid. The licensee requested documentation of this fact from ASCO. ASCO responded by a letter dated July 21, 1982. This letter had, as enclosures, diagrams which showed the "old" and "new" solenoid valve in cutaway view. Along with the change in number, the vendor changed the method of mounting the solenoid, but did not make any noticable modifications to the valve's operation.
- f. Four Nonconformance Reports (NCR's) were written between October 26, 1981, and July 21, 1982, on various problems with the solenoid and its replacement. The only mention in these NCR's of the type of solenoid used for SFY-46204 was in the July 21, 1982 NCR (S-2752) which was written of the solenoid type in work requests was on the work request used to replace the solenoid (60641). In this case, the supervisor asked that the inspector "inspect any wires lifted to kill 118 VAC to the solenoid." After the solenoid was destroyed during the test performed on the afternoon of July 15, 1982, the supervisor changed the words "118 VAC" to "118 VDC." This change

occurred at about the same time that the QC inspector finished his inspection and noted that an AC solenoid was incorrectly installed.

- g. QAP 3, Rev. 7, dated September 1, 1981, defines QA classes for systems, structures, subassemblies, and components. A Commercial Grade Spare Part is defined as follows:

"An item which is not subject to design or specification requirements that are unique to Rancho Seco and which are ordered from the original manufacturer supplier on the basis of specifications set forth in the manufacturer's published product description (catalog)."

It appears that the solenoid in question fits this definition. It is noted that QAP 3 also states that "Commercial Grade Spare Parts may exist under the classification of QA Class I...." It appears that the solenoid in question also fits this discussion (see page 3-3 in QAP-3).

- h. QAP 4, Rev. 8, dated October 7, 1981, states, in part (page 4-1, item 7):

"Procurement of Commercial Spare Parts (QA Class I and Selected Class II) must be originally approved by Quality Assurance, Nuclear Operations and Generation Engineering prior to releasing a purchase order. The purchase order shall state the item is a Commercial Grade Spare Part."

The above item was not complied with in this case. In fact, at an exit meeting on July 28, 1982, licensee representatives stated that this was not done and is not being complied with at present. The above requirement becomes important, because the Commercial Grade Spare Part designation on the purchase order is the "cue" to QA and receiving entities on further action that they must take in accordance with other Quality Assurance procedures. For example, QAP-10, Rev. 9, dated September 1, 1981, states, in part: "A receiving inspection will be performed on all Class I, selected Class II and Commercial Grade Spare Parts including contractor furnished materials." Had the QA program been followed, the solenoid in question might have been segregated from nonclassified receipts, inspected, and would not have been installed prior to the discovery of the incorrect solenoid coil.

Open Item 81-29-04 on the subject of confusion in understanding the QA classification system is now closed based on follow-up action that the licensee will take.

#### 4. Surveillance Observations

The inspectors observed portions of the below listed surveillance testing to verify that the tests were covered by properly approved procedures; that the procedures used were consistent with technical specification requirements; that minimum crew requirements were met; that test prerequisites were completed; that special test equipment was calibrated and in service; and that the test results were adequate.

- a. SP203.05B - Monthly DHR pump venting and loop service (P-261B)
- b. SP203.06A - Quarterly DHR-A SFAS Valves
- c. SP206.03B - Diesel Generation "B" Monthly Test
- d. SP201.03B - Surveillance of Plant Fire System (Motor driven)

No items of noncompliance or deviations were identified.

#### 5. Review of Plant Operations (Training)

The inspectors attended training sessions on requalification training exam reviews, core physics, health physics, reactor building ventilation, and interpersonal relations. Lesson plan objectives and requalification program schedules were met with respect to the above training.

The inspectors verified by direct questioning of over thirty employees that required training had been covered. The employees questioned included craftsmen, technicians, building maintenance personnel, engineers, operators, and management. New, existing, and temporary employees were also interviewed. The training for nonlicensed personnel included the subjects of reactor building ventilation, fire fighting, on-the-job training, radiological health and safety, emergency plan, procedures, security, quality assurance, and interpersonal relations.

With respect to the interpersonal relations training, the Sacramento Municipal Utility District (SMUD) contracted with a company to instruct all SMUD employees with training in communications skills. The program (named UPWARD) is designed to improve ones ability to be more open and honest with each other; to improve ones communication with employees from other departments and at different levels; to learn to listen better; to understand the other person's point of view; and more.

The current training, licensed and nonlicensed has improved since the last inspection. More changes are on the horizon.

No items of noncompliance or deviations were identified.

#### 6. TMI Action Plan Verification

Previous inspection reports document various actions taken by the SMUD to comply with NUREG-0578 and NUREG-0737, TMI Action Plan requirements.

This paragraph documents further activities performed by the inspectors in support of the NRC verification activities.

Due to High Pressure Injection nozzle cracking and Auxiliary Feedwater Header repairs, the plant's refueling outage scheduled for September 1982, has been delayed until approximately January 1983. Therefore, prior references to the 1982 refueling outage now should refer to the 1983 outage.

The following TMI items were opened in past reports but are closed here for record purposes. These items will be followed via a TMI tracking system.

81-07-04 - Shift Manning

81-21-06 - Radiation Signals on CIVs

81-21-07 - Safety Grade Turbine/Reactor Trip

The following inspection results represent the latest available information on the items inspected:

##### 1.A.1.3(2) - Minimum Shift Crew (OPEN)

Technical Specification Table 6.2-1 and a letter dated February 11, 1982, J. J. Mattimoe (SMUD) to J. Stolz (NRR) were compared with criteria in NUREG-0737, Page 3-9. It was noted that the documents do not include provisions for the second reactor operator in the control room as required. This matter was reviewed with the licensee and corrective action is expected to be completed by June 1985.

##### II.B.1 Emergency Procedures for Reactor Coolant System Vents (OPEN)

Because the licensee's final design for these vents has not been concluded, the licensee has not developed emergency procedures which reflect the use of the vents. The licensee's

latest stated position on this issue is documented in a March 4, 1982 letter, Wm. Walbridge (SMUD) to John Stolz (NRR). According to this document, the emergency procedures which afford the detailed operator guidelines for utilizing the High Point Vents (HPVs) are being developed. These guidelines will be created in the Abnormal Transient Operator Guidelines (ATOG) format for future inclusion into ATOG procedures. No new commitment date for submittal of these procedures has been offered or appears necessary but the procedures will be functional by the end of the 1983 refueling outage according to licensee representatives.

I.C.I. Guidance for the Evaluation and Development of Procedures for Transients and Accidents (OPEN)

A June 4, 1982 letter from J. J. Mattimoe to NRR was reviewed and the commitments compared to criteria stated in NUREG-0737, Page 3-45, under the Implementation heading. The licensee's intent is to have revised emergency procedures written and implemented prior to return to operation following the next refueling outage in 1983. This commitment is in accordance with NUREG-0737. The guidelines for ATOG have been submitted for B&W plants on a generic basis. Plant specific request for information may follow as NRR concludes their generic review.

No items of noncompliance or deviations were noted.

7. Follow-up on Headquarter's Requests

During the inspection period, personnel from the NRC Headquarters in Bethesda, Maryland, requested information from the Resident Inspectors about the operation, design and maintenance of the Rancho Seco power plant. Information was obtained and transmitted to the NRC Headquarters on

- (a) Auxiliary feed header repairs,
- (b) Visit of French AEC inspector,
- (c) Velan check valve configuration in DHR system, and
- (d) Polar crane track repairs.

No items of noncompliance or deviations were identified.

8. Follow-up on Regional Requests

During the inspection period, personnel from the Region V office of the NRC in Walnut Creek, California requested information from

the Resident Inspectors regarding the operation and maintenance of the Rancho Seco power plant. Information was obtained and transmitted to the Region V office concerning:

- (a) Auxiliary feed header repairs,
- (b) Construction schedule for plant modifications, and
- (c) Polar Crane track repairs.

No items of noncompliance or deviations were identified.

9. Independent Inspection Effort

Discussions were held between the resident inspectors and operations, security, and maintenance personnel in an attempt to better understand problems they may have which are related to nuclear safety. These discussions will continue as a standard practice.

On numerous occasions, during the month of July 1982, the resident inspectors attended outage status meetings. These meetings are held by the planner/scheduler to provide all disciplines on-site with an update on the plant status and on-going maintenance work.

In addition to the above, independent inspection effort was performed on the following items:

- (a) Polar crane track repairs,
- (b) NSEB construction,
- (c) Velan check valve arrangement in DHR system, and
- (d) TMI shift manning requirements.

No items of noncompliance or deviations were identified.

10. Exit Interview

The inspectors met with licensee representatives in exit meetings on July 28, 1982, and July 29, 1982. During the meetings the inspectors informed the licensee that the maintenance performed on a safety features valve represented a possible violation (see paragraph 1 for attendees).

During the July 28, 1982 meeting, the licensee stated that they do not believe any changes need to be made with respect to the order in which work is performed and documented on safety-related work requests. Repair, replacement, inspection, and review of this

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maintenance work is felt to be able to be performed concurrently, as the work dictates, according to licensee representatives. The licensee did acknowledge that, in the case described in paragraph 3 of this report, if the QC inspection had been completed prior to testing, the problem would not have occurred.

Also, at this meeting, licensee representatives stated that the QA program was not and is not being followed with respect to use of Commercial Grade Spare parts and the related purchasing and inspection aspect of the quality assurance program.

On July 28, 1982, as part of a phone discussion with the Quality Assurance Director, a commitment was received in that changes to various Quality Assurance Procedures (QAPs) which should clarify confusion on this issue will be completed by August 9, 1982; that training will be given on use of the QAP requirements on about August 5, 1982; and that the program will be implemented by September 1, 1982.

One item of noncompliance was discussed at both exits. See paragraph 3.